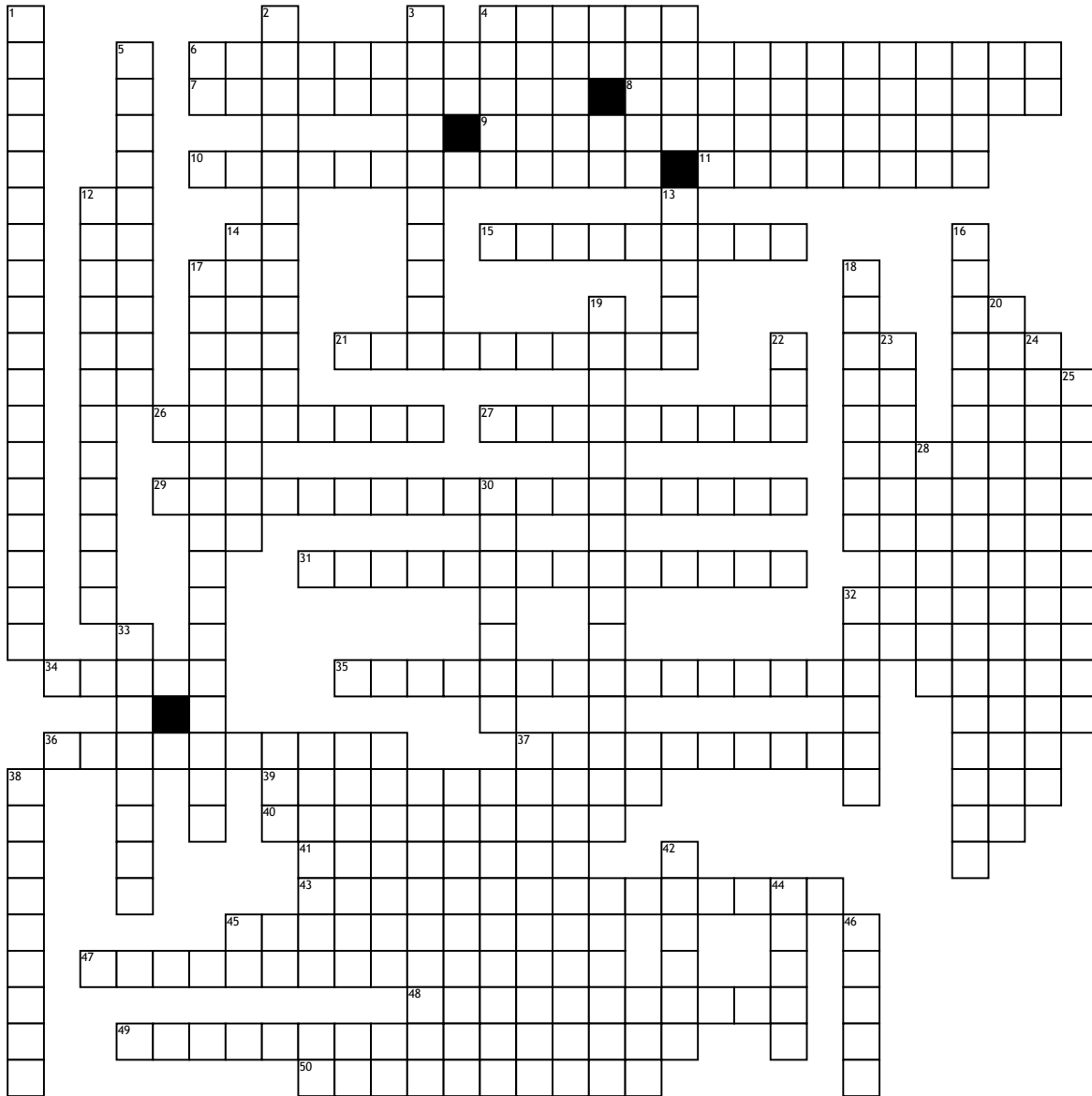


# Discrete Math



**Across**

- 4. An edge that when removed, causes the graph to become not connected
- 6. A method of voting where if no candidate gets the majority, you remove the last-place candidate
- 7. When we are easily able to tell if something is part of a set
- 8. All elements under consideration in a given discussion
- 9. Listing the elements of a set
- 10. A graph in which every edge has direction
- 11. The set that contains no elements
- 15. A graph with a distinct starting and ending point where all middle points have a degree of two
- 21. A cycle graph with a hub in the center
- 26. The method of solving the travelling salesperson problem where you choose the cheapest connection in the entire graph
- 27. A set whose cardinal number is a whole number
- 29. A way to write sets when all elements have a common characteristic
- 31. The number of distinct elements in a set
- 34. The name of the person responsible for creating the four step problem solving process
- 35. Rather than "wasting your vote" on a candidate that won't win, you cast a vote for a lesser choice with a better chance of winning

- 36. The set of elements of the universal set that are not in a particular set
  - 37. The method of solving the travelling salesperson problem where all possible routes are listed
  - 39. Our numeral system
  - 40. A voting method in which points are assigned based on the number of first place votes, second place votes, etc.
  - 41. More than 50% of the first-place votes
  - 43. The minimum number of colors needed to color a graph
  - 45. A set that is not finite
  - 47. A graph that represents a set of regions where each region is a vertex and each border is an edge
  - 48. 2 sets with the same cardinal number
  - 49. A number that is easier to use than the original number
  - 50. When edges in a graph are duplicated so that all vertices are even
- Down**
- 1. A voting method that pairs every candidate in head-to-head matches with every other candidate
  - 2. a path that covers all edges and ends where it started
  - 3. The set of elements in B but not in A
  - 5. A graph where every vertex has a degree of two
  - 12. The set of elements common to both sets
  - 13. A series of vertices and edges

- 14. 2 sets with exactly the same elements
- 16. A table that summarizes information gathered from preference ballots
- 17. A ballot which the voters are asked to rank the candidates in order of preference
- 18. Filling in regions so that no neighboring regions use the same color
- 19. A path that travels through all vertices
- 20. The method of solving the travelling salesperson problem where you start in a specified city and travel to the cheapest city from there
- 22. A collection of objects
- 23. A voting method in which the candidate with the most first-place votes
- 24. A graph where all vertices are connected to all other vertices
- 25. An approximation (usually mental) of size of value
- 28. A symbol which represents a number
- 30. Listing the order of outcomes in an election
- 32. The number of edges that touch a vertex
- 33. Individual objects in a set
- 38. A graph that has a path between any set of vertices
- 42. Tells us how many
- 44. The lines that connect vertices
- 46. The set of elements of either set